CIRC ACCESSION NO--AP0107896

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CERTAIN RESULTS OF TESTS CONDUCTED
FROM JUNE 1968 TO JANUARY 1969 OF THREE NEW TYPES OF TUBULAR DIESEL
HAMMERS DESIGNED FOR REINFORCED CONCRETE PILE DRIVING, UNDER CONDITIONS
OF EXTREME NORTH ARE PRESENTED. THE NEW DIESEL HAMMERS, WHOSE
CHARACTERISTICS ARE GIVEN, DIFFER FROM THE PREVIOUS ONES BY HIGHER
RESILIENCE, THERMAL TREATMENT AND WELDING OF THEIR COMPONENTS, ENSURING
THEIR STRENGTH AT MINUS 60DEGREESC AIR TEMPERATURE. THE WEIGHT OF
HAMMERS AND THEIR IMPACT ENERGY PER BLOW ARE RESPECTIVELY: 1800, 2500
AND 3500 KG; 3200, 4350 AND 6100 KG-M. THEY ARE PROVIDED WITH DEVICES
WHICH CAN INCREASE THE COMPRESSION RATIO UP TO 20, RESULTING IN THE RISE
OF AIR TEMPERATURE IN A CYLINDER AT THE END OF THE COMPRESS ON PROCESS.
THIS TEMPERATURE INCREASE THEORETICALLY IMPROVES THE STARTING OF HAMMERS
AT MINUS 30DEGREESC. HOWEVER, THE TESTS CONDUCTED ON VARIOUS SITED DID
NOT SHOW AN IMPROVEMENT IN STARTING QUALITY OF HAMMERS AT MINUS
30DEGREESC WITH A COMPRESSION RATIO OF 20. IT WAS ESTABLISHED THAT
STARTING THE HAMMERS WITH A COMPRESSION RATIO OF 15 IS ENSURED WHEN THE
PILE DRIVING IS DONE AT 12-14 CM PER BLOW, WHILE WITH A COMPRESSION
RATIO OF 20 STARTING IS POSSIBLE ONLY WITH 1 OR 2 CM PER BLOW. IT WAS
FOUND, THAT IN ORDER TO SECURE A GOOD STARTING QUALITY AND HIGH
PRODUCTIVITY OF HAMMERS, IT IS NECESSARY THAT THE CONCRETE PILE WEIGHT
BE GREATER THAN THE WEIGHT OF THE IMPACTING MASS, BUT NOT GREATER THAN
THE WEIGHT LIMIT CHARACTERISTIC OF EACH TYPE OF DIESEL HAMMERS. DRIVING
TECHNIQUES USED IN VARIOUS SOILS WITH VARIOUS REINFORCED CONCRETE PILES
(30 TIMES 30, 35 TIMES 35 CM AND HOLLOW 600 MM IN DIAMETER) ARE
DESCRIBED.
                              UNCLASSIFIED

USSR

UDC 624.155.15

LYZO, B. G., DMITREVICH, Yu. V., TERENTSKIY, L. N.

"New Tubular Pile Driving Diesel Hammers"

Moscow, Osnovaniya, Fundamenty i Mekhanika Gruntov, No 1, 1970, pp 27-28

Abstract: Certain results of tests conducted from June 1968 to January 1969
on three new types of tubular diesel hammers designed for reinforced concrete
pile driving, under conditions of Extreme North are presented. The new
diesel hammers, whose characteristics are given, differ from the previous
ones by higher resilience, thermal treatment and welding of their components,
ensuring their strength at -60°C air temperature. The weight of hammers and
their impact energy per blow are respectively: 1800, 2500 and 3500 kg; 3200,
4350 and 6100 kg/m. They are provided with devices which can increase the
compression ratio up to 20, resulting in the rise of air temperature in a
cylinder at the end of the compression process. This temperature increase
theoretically improves the starting of hammers at -30°C. However, the tests
conducted on various sites did not show an improvement in starting quality of
hammers at -30°C with a compression ratio of 20.

1/2

It was established that starting the hammers with a compression ratio of 15 is ensured when the pile driving is done at 12-14 cm per blow, while with a compression ratio of 20 starting is possible only with 1 or 2 cm per blow. It was found, that in order to secure a good starting quality and high productivity of hammers, it is necessary that the concrete pile weight be greater than the weight of the impacting mass, but not greater than the weight limit characteristic of each type of diesel hammers. Driving techniques used in various soils with various reinforced concrete piles (30x30, 35x35 cm and hollow 600mm in diameter) are described. Orig. art. has: 1 table.

2/2

ANO012615

UR 9017

AUTHOR-- PUSTYL,NIK, I., JUNIOR SCIENCE ASSOCIATE, THE INSTITUTE OF PHYSICS AND ASTRONOMY OF THE ESTONIAN ACADEMY OF SCIENCES /IPA/, CANDIDATE OF PHYSICAL-MATHEMATICAL SCIENCES

TITLE-- ELECTRONICS IN THE SERVICE OF ASTRONOMERS

NEWSPAPER-- SOVETSKAYA ESTONIYA, JANUARY 16, 1970, P 4, COLS 4-7

ABSTRACT-- THE AUTHOR BRIEFLY REVIEWS THE ACTIVITIES OF THE ASTRO-PHYSICAL OBSERVATORY AT TYRAVERA. SEVERAL YEARS AGO, ITS ENGINEERS E. MAAZIK AND R. KOPPEL DESIGNED PHOTOELECTRIC PHOTOMETERS AND THE CONTROL PANEL FOR A DOUBLE TELESCOPE. THE PROJECT WAS DIRECTED BY U. VEYSMAN, JUNIOR SCIENCE ASSOCIATE.

YU. IBRUS, JUNIOR SCIENCE ASSOCIATE, SECTION OF THE EXPERIMENTAL PHYSICS OF THE IPA, AND L. UTTER, SENIOR ENGINEER, DESIGNED AN ELECTRO-SPECTROPHOTOMETER.

18571503

AN0012615

YA. OYASTE, JUNIOR SCIENCE ASSOCIATE, AND R. LAYGO, SENIOR DESIGN ENGINEER, ARE ABOUT TO COMPLETE THE DESIGN OF A SPECTROGRAPH WITH AN ELECTRONIC-OPTICAL CONVERTER, WHICH IS KNOWN AS "OMIKRON".

THE TYRAVERA OBSERVATORY IS SLATED TO RECEIVE THE 1.5 METER AZT-12 TELESCOPE WHEN ITS CONSTRUCTION IS COMPLETED AT THE LENINGRAD OPTICAL-MECHANICAL PLANT.

THE INSTITUTE,S CALCULATIONS ARE MADE IN THE COMPUTER VNIEM-3.

THE SECTION OF EXPERIMENTAL ASTROPHYSICS, WHICH HAS BEEN RECENTLY FORMED AT THE IPA, IS HEADED BY L. LUUD, SENIOR SCIENCE ASSOCIATE, CANDIDATE OF PHYSICAL-MATHEMATICAL SCIENCES.

19571504

USSR

MAAZIK, I. KH.

"Toxic Action of Small Doses of Dimethylphenols in Chronic Experiment"

Tr. In-ta eksperim. i klinich. med. M-va zdravookhr. EstSSR (Works of
Institute of Experimental and Clinical Medicine of Ministry of Health
Estonian SSR), 1970, 3, pp 171-176 (English summary) from Ekh-Biologicheskaya
Khimiya, No 2, 25 Jan 71, Abstract No 2F2120 by A. IGNAT'YEV)

Translation: 2,6- or 3,4-dimethylphenols administered internally to rats
in doses of 6 and 14 mg/kg per day respectively lowered -- while doses of
0.06 and 0.14 mg/kg did not affect -- the SH-group content of the blood
serum.

1/1

USSR

KIRSO, U. E., and MAAZIK, I. KH.

"The Relation Between the Toxicity of Phenols and Their Structure"

Tr. In-ta eksperim. i klinich. med. M-va zdravookhr. EstSSR (Works of the
Institute of Experimental and Clinical Medicine of the Ministry of Health
Estonian SSR), 1970, 3, pp 177-183 (English summary) (from Ref-Biolog. Khimiya,
Khimiya, No 2, 25 Jan 71, Abstract No 2F2085 by A. IGNAT'YEV)

Translation: The toxicity of xylenols for mice, rats and rabbits is similar
and is quantitatively determined by the structure of the particular phenol
with the help of the Hammett-Taft equation. Values of substituent constants
are of great importance in this connection.

USSR

UDC: 632.95

PINAMONTA, FRANCO and MACCONE, SERGIO, Montecatini, Joint Stock Company of the Mineral and Chemical Industry (Italy)

"A Method for Preparing Liquid Insecticides"

USSR Author's Certificate No 248575, filed 23 Jul 62, published 8 Jan 70 (from RZh-Khimiya, No 22, 25 Nov 70, Abstract No 22 N659 P by P. V. Popov)

Translation: To prepare liquid concentrated preparations containing as an active insecticidal substance 0,0-dimethyldithiophosphotylacetic acid monomethylamide and a surfactant, phenol, Cellosolve acetate, Carbitol acetate, and o-cresol are added to stabilize the active substance.

1/1

- 92 -

1/2   013   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--ON THE TRANSLATION INVARIANT SHELL MODEL -U-

AUTHOR--MACHABELI, I.Z.

COUNTRY OF INFO--USSR

SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 3, NR 1, PP
106-114
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NUCLEAR SHELL MODEL, NUCLEAR ENERGY LEVEL, QUANTUM NUMBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1028   STEP NO--UR/0646/70/003/001/0106/0114

CIRC ACCESSION NO--AP0130063
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0130063

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CLASSIFICATION OF STATES IN
THE KRETSCHMAR TRANSLATION INVARIANT SHELL MODEL (L) IS ENLARGED BY
MEANS OF INTRODUCING A NEW QUANTUM NUMBER CHARACTERIZING THE IRREDUCIBLE
REPRESENTATION OF THE ORTHOGONAL GROUP O SUBA-1. THIS DIMINISHES THE
MULTIPLICITY OF A GIVEN IRREDUCIBLE REPRESENTATION OF PERMUTATION GROUP
E SUBA IN THE REDUCTION OF UNITARY GROUP U SUBA-1. VARIOUS
RELATIONSHIPS ARE ALSO OBTAINED WHICH ARE USEFUL FOR THE IMPROVEMENT OF
THE MODEL.   FACILITY: TBILISSKIY GOSUDARSTVENNYY UNIVERSITET.

UNCLASSIFIED

USSR   UDC 519.3.110.74.62-50

KHARATISHVILI, G. L., MACHAIDZE, Z. A., MARKOZASHVILI, N. I., and TADUMADZE,
T. A.

"Abstract Variational Theory and Its Applications to Optimization Problems
With Time Lags"

Abstraktnaya Variatsionnaya Teoriya i Yeye Primeneniya k Optimal'nym Zadacham
s Zapazdyvaniyami (cf. English above), Tbilisi, Mutsniyereba Publishing
House, 1973, 112 pp, Annotation p 4, Introduction pp 5-6

Translation: Annotation -- The work proves the quasiconvexity of filters,
which makes it possible to obtain from the necessary criticality condition
the necessary optimality conditions in the form of the maximum principle for
optimization problems containing time lags, not only in the phase coordinates
but also in the controls. The optimization problem with time lags subject to
mixed constraints on phase coordinates and controls is studied separately.
Proof is given of the necessary optimality condition that permits, in particu-
lar, solution of bottleneck problems in which the time-lag factor is con-
sidered. Finally, an algorithm is given and a standard program described

1/4

·USSR

KHARATISHVILI, G. L., et al., Abstraktnaya Variatsionnaya Teoriya i Yeye
Primeneniya k Optimal'nym Zadacham s Zapazdyvaniyami, Tbilisi, Metsniyereba
Publishing House, 1973, 112 pp

that makes possible calculation of quasilinear optimal time-lag systems.

     Excerpt from Introduction -- Extremal problems in linear topological
spaces are formulated as problems in the determination of critical filters of
a given mapping. Therefore, the criterion for finding the critical filters
of mappings yields the corresponding criterion for solving the given extremal
problem. To formulate nontrivial criticality criteria it is necessary to
apply certain conditions not only to the class of mappings under consideration
but also to the class of unknown critical filters. However, these constraints
must be broad enough to comprehend the fundamental variational and optimiza-
tion problems. The mappings under consideration are assumed to be differen-
tiable, and the unknown filters to be quasiconvex; the respective definitions
are given in 1.1.

2/4

USSR

KHARATISHVILI, G. L., et al., Abstraktnaya Variatsionnaya Teoriya i Yeye Primeneniya k Optimal'nym Zadacham s Zapazdyvaniyami, Tbilisi, Metsniyereba Publishing House, 1973, 112 pp

    1.2 establishes the quasiconvexity of the filters pertinent to optimization problems with time lags (see 2.1). The differentiable mapping corresponding to these problems is then constructed and the necessary optimality condition derived from the necessary criticality condition in the form of the maximum principle for optimization problems containing time lags, not only in the phase coordinates but also in the controls (see 2.2).

    2.3 and 2.4 prove theorems on the differentiability and continuous dependence of the solutions to the differential equations on the right-hand sides that are used in the preceding paragraphs.

    Section 3 studies optimization problems containing a time lag in the controls in the presence of mixed constraints on the phase coordinates and controls. Bottleneck problems in particular reduce to these if we consider a time lag in the controls that in real systems, as a rule, is different from

3/4

USSR

KHARATISHVILI, G. L., et al., Abstraktnaya Variatsionnaya Tecriya i Yeye
Primeneniya k Optimal'nym Zadacham s Zapazdyvaniyami, Tbilisi, Metsniyereba
Publishing House, 1973, 112 pp

zero and plays an important role (see R. BELLMAN, Dinamicheskoye Programmiro-
vaniye /Dynamic Programming/, Foreign Literature Press, 1960 /12/). The
principal result of the section is the necessary optimality condition, given
in the form of a maximum principle, proof of which is effected by the local
cross-section method suggested by V. G. BOLTYANSKIY in Matematicheskiye Metody
Optimal'nogo Upravleniya (Mathematical Methods of Optimal Control), Nauka
Publishing House, 1969 /13/. The conclusion of the section gives an appli-
cation of the maximum principle to bottleneck problems.

The concluding Section 4 is devoted to the method of numerical calcu-
lation of linear time-optimal systems containing time lags in both the con-
trols and the phase coordinates. Substantiation of the computational algo-
rithm is given, as well as a brief description of the standard program com-
piled on the basis thereof, which is used to calculate several test examples
on a BETM-4 electronic computer. Results of the calculation are given in a
table.
4/4

- 73 -

TITLE--CARBONYL COMPOUNDS AND THEIR ROLE IN THE AROMA OF FRUITS AND
BERRIES -U-
AUTHOR-(04)-PISARNITSKIY, A.F., VERESHCHAGIN, P.V., MACHAROSHVILI, G.I.,
BOGATOVE, YE.G.
COUNTRY OF INFO--USSR

SOURCE--PRIKL. BIOKHIM. MIKROBIOL. 1970, 6(1), 13-17

DATE PUBLISHED-------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AGRICULTURE CROP, CHEMICAL ANALYSIS, CARBONYL COMPOUND, PAPER
CHROMATOGRAPHY, ALDEHYDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0895   STEP NO--UR/0411/70/006/001/0013/0017

CIRC ACCESSION NO--AP0055593
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0055593

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPN. OF VOLATILE CARBONYL
COMPDS. IN RASPBERRIES AND STRAWBERRIES AT DIFFERENT RIPENING STAGES,
AND THEIR CONTENT IN MATURE FRUITS WERE DETD. THEY WERE SEPD. AS
2,4-DINITROPHENYLHYDRAZONES BY PAPER CHROMATOG. THE MAIN CHANGES
NOTICED DURING THE MATURIZATION PROCESS WERE THE SYNTHESIS OF PHCHO AND
THE DISAPPEARANCE OF HEXANAL AND HEXENE-2-AL.

UNCLASSIFIED

1/2   014   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--EFFECT OF A COMBINED PREPARATION OF GANGLERON AND PAPAVERINE -U-

AUTHOR-(02)-MACHAVARIANI, A.S., AVALISHVILI, M.G.

COUNTRY OF INFO--USSR

SOURCE--SOOBSHCH. AKAD. NAUK GRUZ. SSR 1970, 57(1), 237-40

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, ALKALOID, CARDIOVASCULAR DRUG, BLOOD
   CIRCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1979   STEP NO--UR/0251/70/057/001/0237/0240

CIRC ACCESSION NO--AP0127374
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0127374

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GANGLERON AND PAPAVERINE
 ADMINISTERED I.V. AT 1 MG EACH-KG IN COMBINATION INCREASED THE BLOOD
 VOL. FLOWING FROM THE CORONARY SINUS OF CATS BY 6C-90PERCENT LARGER THAN
 2 HR. THE ABILITY OF THE COMPDS. APPLIED TOGETHER IN SMALL DOSES TO
 INCREASE AND ACCELERATE THE EFFECT OF THE OTHER WITHOUT PRODUCING ANY
 SIDE EFFECTS SUGGESTS POSSIBLE COMBINED CLIN. USE.   FACILITY:
 TBILIS. GOS. INST. USOVERSH. VRACH., TBILISI, USSR.

UNCLASSIFIED

M

USSR   UDC 619:616.981.452-084:636.52/.58

MACHAVARIANI, A. T., Georgian Zooveterinary Training and Research Institute

"Use of Live Newcastle Disease Vaccines in Poultry"

Moscow, Veterinariya, No 2, 1970, pp 49-52

Abstract: The purpose of the study was to compare the immunogenic properties of Newcastle disease vaccines prepared from the V_1, La-Sota, and N strains and to work out an appropriate schedule for their use in immunizing chicks. Tests with different time intervals and modes of vaccination showed the following schedule to be the most effective: (i) first vaccination - with V_1 or La-Sota vaccine, intranasally or via aerosol, at the age of 6-10 days; (ii) second vaccination - with the same vaccines at the age of 20-30 days; (iii) third vaccination - with the N vaccine at the age of 60-75 days. La-Sota and smallpox vaccines are compatible, so both can be used for simultaneous vaccination of poultry against Newcastle disease and smallpox when the situation warrants.

1/1

1/2   025   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--THE MUTAGENIC EFFECT OF VIRUSES. REPORT II. CYTOGENETIC STUDY OF
    MONKEY HEMORRHAGIC FEVER -U-
AUTHOR-(05)-MARKARYAN, D.S., SHEVTSOVA, Z.V., KUKSOVA, M.I., MACHAVARIANI,
    M.G., ABDZHIAN, M.V.
COUNTRY OF INFO--USSR

SOURCE--GENETIKA, 1970, NR 1, PP 144-150

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEMORRHAGIC FEVER, VIRUS, MUTAGEN, MONKEY, BONE MARROW,
    MITOSIS, CHROMOSOME

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1371   STEP NO--UR/0473/70/000/001/0144/0150

CIRC ACCESSION NO--AP0136729
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0136729
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CYTOGENETIC STUDY OF MONDEY
 HEMORRHAGIC FEVER SHOWED A DECREASE IN MITOTIC ACTIVITY AND AN INCREASE
 IN THE NUMBER OF DYING CELLS AND CELLS WITH PATHOLOGICAL CHANGES IN
 INFECTED MONKEY BONE MARROW. EXPERIMENTAL MONKEY HEMORRHAGIC FEVER WAS
 ACCOMPANIED BY AN INCREASE IN THE LEVEL OF CHROMOSOME ABERRATIONS IN
 BONE MARROW CELLS AND IN CULTURES OF PERIPHERAL BLOOD LEUKOCYTES.
 INJECTION OF CONCENTRATED VIRUS CONTAINING MATERIAL PRODUCED A HIGHER
 YIELD OF CHROMOSOME ABERRATIONS THAN INJECTION OF NATIVE MATERIAL.
 HEMORRHAGIC FEVER VIRUS INDUCED CHROMOSOME REARRANGEMENTS OF THE
 CHROMATIC TYPE, ANALOGOUS TO THOSE OBSERVED IN CONTROL CELLS DURING
 SPONTANEOUS MUTATION. THE OBSERVED INCREASE IN THE LEVEL OF CHROMOSOME
 ABERRATIONS IN MONKEY BONE MARROW CELLS DUE TO THE VIRUS INDICATES THE
 REAL VALUE OF THIS VIRUS IN INTENSIFYING THE MUTATION PROCESS IN SOMATIC
 TISSUES OF SENSITIVE TYPES. TWENTY MACACA RHESUS MONKEYS WERE INFECTED
 WITH HEMORRHAGIC FEVER VIRUS PASSAGED 21-24 TIMES IN MONKEYS. MONKEYS
 WERE INFECTED WITH BRAIN MATERIAL FROM SICK MONKEYS IN 1 ML AMOUNTS IN A
 TITER OF 10 PRIME3 ML (10 LETHAL DOSES) OR WITH MATERIAL CONSISTING OF
 100 LETHAL DOSES. THE INCUBATION PERIOD OF THE DISEASE VARIED FROM 2-6
 DAYS.   FACILITY: INSTITUT EKSPERIMENTAL'NOY PATOLOGII I TERAPII,
 AMN SSSR, SUKHUMI.

Acc. Nr.: AP0029817

Ref. Code: UR 0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 81-86

SUMMARY
ECHOENCEPHALOGRAPHY AS AN ADJUNCTIVE MENTHOD IN THE NEUROLOGICAL CLINIC

D. I. Panchenko and E. L. Macheret (Kiev)

Results indicate that echoencephalography is a promising valuable method as it allows to investigate not only topical aspects of the disease but also to get ideas about the etiology of the process.

Echoencephalography is of help in studying the dynamics of the disease which is of particular value in the postoperative period and in patients with vascular pathology. The method is simple and safe, has no contraindications. Wide introduction of this method into clinical practice is recommended.

MK

2

REEL/FRAME

19681503

USSR

UDC 669.162.267.645

LEVIN, M. Z., MACHIKIN, V. I., SKLADANOVSKIY, YE. N., KUZUB, A. G., and
KRASAVTSEV, I. N., Donetsk Polytechnic Institute, Donetsk Metallurgical Plant

"Desulfuration of Pig Iron with Regulatable Introduction of Ingotted Magnesium"

Abstract: From 1970 on, studies have been conducted at the Donetsk Metallur-
gical Plant and Donetsk Polytechnic Institute on the Development of equipment
for use in the desulfuration of pig iron by regulated introduction of magnesium
ingots. A new method of introducing the ingotted magnesium into liquid pig
iron serves as the basis of the equipment. Diagrams show the equipment for
regulated magnesium introduction and a schematic of the gas supply to the
evaporator. Industrial test results are given. Two figures, one table.

1/1

TITLE--CONTACT HEAT TRANSFER AND UNSTEADY HEAT TRANSFER THROUGH A VACUUM
    CAVITY -U-
AUTHOR--MACHILSKI, A.P.

COUNTRY OF INFO--USSR

SOURCE--TEPLOFIZIKA YVSOKIKH TEMPERATUR, VOL. 8, JAN. FEB. 1970, P.
    147-153
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CONDUCTIVE HEAT TRANSFER, VACUUM CHAMBER, LINEAR
    APPROXIMATION, INTEGRAL EQUATION, CYLINDRIC SHELL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0382   STEP NO--UR/0294/70/008/000/0147/0153

CIRC ACCESSION NO--AP0111575
                      UNCLASSIFIED

CIRC ACCESSION NO--AP0111575

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL ANALYSIS OF CONTACT
HEAT TRANSFER AND UNSTEADY HEAT TRANSFER IN MEDIA CONTAINING AIRLESS
SPACES. A METHOD FOR SOLVING THE HEAT TRANSFER PROBLEMS OF SUCH MEDIA
IS DESCRIBED. THE METHOD IS APPLIED TO SOLVING THE HEAT TRANSFER
PROBLEMS OF TWO HOLLOW CYLINDERS ONE OF WHICH IS INSERTED INTO THE OTHER
IN SUCH A MANNER THAT THERE IS EITHER A PARTIAL CONTACT BETWEEN THE
CYLINDERS OR THEY ARE SEPARATED THROUGHOUT BY AN AIRLESS ANNULAR
INTERSPACE. A PIECEWISE LINEAR APPROXIMATION PROCEDURE IS USED IN
SOLVING A SYSTEM OF NONLINEAR INTEGRAL EQUATIONS DESCRIBING THE UNSTEADY
HEAT TRANSFER THROUGH THIS INTERSPACE.   FACILITY: AKADEMIIA NAUK
SSSR, RADIEVYI INSTITUT, LENINGRAD, USSR.

UNCLASSIFIED

USSR

MACHIL'SKIY, A. P. (Khlopin Radium Institute)

"Contact and Nonstationary Heat Transfer through a Vacuum"

Moscow, Teplofizika Vysokikh Temperatur; January-February, 1970; pp 147-53

Δ Δ Δ

ABSTRACT: A direct method is suggested for the solution of problems of contact and nonstationary heat transfer through a vacuum, such as stationary heat transfer in two tangent hollow cylinders and nonstationary heat transfer in two nontangent cylinders, with a vacuum separating the cylinders in both cases. For the solution of the second problem the author adds to the method the technique of piecewise linear approximations, which can be used to solve nonlinear integral equations of a special type. Actual figures are obtained in the solutions to the problems.

1/1

7358
CSO: 1870-D (164 pages)   - END -

- END -

MACHIGIN, N.V.

HISTORY OF THE HYDROMETEOROLOGICAL SERVICE OF TADZHIKISTAN

The history of the development of the scientific research...
operative work within the agencies of the Hydrometeorological...
Service of the republic is discussed.

Before the Great October Socialist Revolution Tadzhikistan was...
of science in general and hydrometeorology in particular was taking...
extremely slow rates here. The information about the climate...
river and lake regime were based only on the observation data of...
logical stations as Khodzhent (opened in 1866) Ura-Tyube (1873),...
(1879), Murgab (1884), Khorog (1894), the hydrologic outposts of...
Zeravshan river and Surkhan on the Naglandar'ya river, opened in 1913...

Valuable data characterizing the hydrometeorological features of...
item was obtained as a result of expeditionary studies in Pamir at...
ning of the Twentieth Century. The multispecs...
peditions of A. P. Fedchenko, V. F. Oshanin and N. L. Korzhenevskiy...
especially much to the knowledge of the severe high-altitude krai.

After the formation of the USSR in Tadzhikistan just as in the...
Union Republics, a stormy rise of the economy began. The development...
of the national economy and the newly created areas, ... transportation...
aviation in its practical activity ran into the necessity for const...
...acceleration of the expected and developed hydrometeorological cond...
urgent necessity for further development of hydrometeorological net...
area of climate, water resources, hydrologic characteristics of...
lakes, the upper layers of the atmosphere, studies of the snow acc...
conditions in the mountains, glaciological research, and so on.

The decree signed by V. I. Lenin on the "Organization of the...
logical Service of the RSFSR" played a decisive role in the devel...
hydrometeorological research in Tadzhikistan. By resolution of...

JPRS 58133
2 Feb 73

- 157 -

TITLE--A REFRIGERATOR MOTORSHIP -U-

AUTHOR--MACHIN, B.

COUNTRY OF INFO--USSR, SWEDEN

SOURCE--VODNYY TRANSPORT, MARCH 31, 1970, P 4, COL 1

DATE PUBLISHED--31MAR70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, MECH., IND., CIVIL AND
MARINE ENGR

TOPIC TAGS--CARGO SHIP, REFRIGERATION, SHIPYARD, FOREIGN TECHNICAL
ASSISTANCE/(U)OSTROV SHMIDTA CARGO SHIP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/1253   STEP NO--UR/9028/70/000/000/0004/0004

CIRC ACCESSION NO--AN0110872
                         UNCLASSIFIED

CIRC ACCESSION NO--AN0110872
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A REFRIGERATOR MOTORSHIP, THE
  "OSTROV SHMIDTA", HAS BEEN RECENTLY DELIVERED TO THE SOVIET UNION BY
  THE"LINDEKHOL'MEN" SHIPYARD IN SWEDEN.

UNCLASSIFIED

MACHINSKIY, G.V.

73

PHYSICAL PERFORMANCE AND FUNCTIONAL STATE OF THE CARDIORESPIRATORY SYSTEM IN MAN AFTER TEN-DAY CONFINEMENT IN A HYPEROXIC MEDIUM

The objective of our study was an investigation of the effect of prolonged confinement in an atmosphere with a high O_2 content on human physical performance.

Over a period of ten days two healthy males age 30 were confined to a pressure chamber with a volume of 7.8 m3 with an atmosphere containing about 54% O_2 ($pO_2 = 400$ mm Hg) at a total pressure of 760 mm Hg. The calorie content of the daily ration was 2,550 Cal; there was no restriction on water intake. In order to compensate for the deficit of muscular activity caused by confinement to a chamber of limited volume the subjects twice each day, 30 minutes daily, engaged in exercises, for the most part using rubber expanders.

The functional state of the cardiorespiratory system was the level of physical performance of the subjects was investigated prior to onset of the experiment and a day after its termination using a test with an increasing physical load, performed on a bicycle-type ergometer.

A comparison of the results of the background and post-experimental examinations revealed that ten-day confinement in a hyperoxic medium exerted no appreciable influence on the quantitative indices of maximum physical performance (maximum duration of rotation of the pedals and amount of work performed). However, the pulse rate with which the subjects ended work after the experiment became greater than that prior to the experiment in one subject by 8% and in another by 14%. The maximum O_2 consumption, although insignificantly, nevertheless

10

USSR

KAKURIN, L. I., PURAKHIN, YU. N., GEORGYEVSKIY, V. S., KATKOVSKIY, B. S.,
VYSOTSKIY, V. G., CHEREPAKHIN, M. A., USHAKOV, A. S., LARICHEVA, K. A.,
PETUKHOV, B. N., IVANOV, P. P., MACHINSKIY, G. V., MIKHAYLOV, V. M., POMETOV,
YU. D., and SMIRNOVA, G. I.

"Locomotor Activity of Man Kept on a Reduced Food Ration"

Abstract: The combination of drastic limitation in locomotor activity with
reduction to a low-calorie diet (down to basal metabolism) was studied in six
healthy men 24-35 years of age who were confined to bed for a number of days
under conditions of hypokinesia. Pronounced changes were observed in the func-
tions of the cardiovascular, respiratory, nervous, and muscular systems of the
body. Tabular data were collected on physiological tremor of closed eyes,
maximum physical work fitness, muscle tone dynamics, and the cardiovascular
system in the orthostatic position. Asthenia of the nervous system and a
slowing down of the biopotentials in the cerebral cortex were observed. Like-
wise, it was noted that hypokinesia caused disturbances in body coordination
and statics. The pulse rate increased and the arterial pulse pressure was
1/2

SSR

KAKURIN, L. I., Voprosy Pitaniya, No 3, May/Jun 1971, pp 7-12

reduced in persons subjected to the orthostatic test. Three persons reached a state of near collapse. These changes were attributed to a significant reduction in the compensating actions of the blood circulation. It was found that after about 10 days, the observed changes gradually decreased in the test subjects. This regression was largely of a functional character and was linked to the "detraining" of the various systems of the body. The authors believe that the severity of the changes in the body functions is directly proportional to the degree of hyperkinesia to which the tested persons were subjected. It is proposed that maintenance of homeostasis requires a certain level of motor activity even with a low-calorie ration.

2/2

USSR   UDC   621.84.001.2(088.8)(74)

MACHINSKIY V. K., KALYUZHNYY, A. D., TRAVNIKOV, Ye. N.

"A Vacuum Tape Transport Mechanism"

USSR Author's Certificate No 282694, filed 25 Aug 69, published 21 Dec 70
(from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7V178 P)

Translation: This Author's Certificate introduces a vacuum tape trans-
port mechanism which contains drive shafts and magnetic heads. As a dis-
tinguishing feature of the patent, in order to shorten the time of the
transient process when the magnetic tape speed changes, and to reduce
the nonuniformity of tape speed, opposite each of the shafts rotating
at different speeds is a corresponding module of "floating" magnetic
heads. Information at each instant of time is recorded by one of the
modules against whose shaft the tape is drawn by a vacuum, while the
other module is held away from its shaft by a jet of air blown through
it.

1/1

USSR

UDC 519.21

MACHIS, Yu. Yu.

"The Stability of Expansions of Certain Distributions"

Lit. Mat. Sb., (Lithuanian Mathematics Collection], Vol 10, No 4, p. 845, (Translated from Referativnyy Zhurnal Kibernetika, No. 5, 1971, Abstract No. 5V13 by V. Prelov)

Translation: It is reported that the author has produced the following result: If the distribution of the sum of two independent random quantities differs (in Levy metrics or in or in even metrics) from the binomial distribution with parameter n by quantity ε, deviation of the distribution of any component from a certain binomial rule does not exceed $\sqrt{\varepsilon}$ in order of magnitude, and this order cannot be improved. A weaker result is contained in an earlier work (RZIMat, 1964, 6V11).

1/1

USSR   UDC: 7.84

YAKUTAVICHENE, D. A., CHESNULYAVICHUTE, G. V., SHYAUCHUKENIYENE, V. I.,
MACHULITE, Yu. A.

"Using the Razdan-3 Digital Computer to Keep a Running Account of the
Progress and Distribution of Stipends Among Students at Kaunas Polytech-
nical Institute"

V sb. Vychisl. tekhn. T. 2 (Computer Technology. Vol 2--collection of
works), Kaunas, 1971, pp 558-565 (from RZh-Kibernetika, No 1, Jan 72,
Abstract No 1V1059)

Translation: A solution is found for the problem of keeping a running
account of exams at Kaunas Polytechnical Institute. The purpose of the
work is to catalog the results of a test session in the profile of groups
and summaries which generalize the results of the session in the profile
of groups, courses, faculties, and in addition to send out to the deans
catalogs of the distribution of stipends by groups, and as a final result
of this distribution to transmit pay records of the stipends by groups
for the entire coming semester. Authors' resumé.

1/1

- 52 -

1/2   023   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--THERMAL CONDUCTIVITY OF LIQUID GALLIUM TELLURIDE, INDIUM TELLURIDE,
AND THALLIUM TELLURIDE -U-
AUTHOR-(02)-FEDOROV, V.I., MACHUYEV, V.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(1), 279-81

DATE PUBLISHED------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--THERMAL CONDUCTIVITY, TELLURIDE, SALLIUM COMPOUND, INDIUM
COMPOUND, THALLIUM COMPOUND, CRYSTALLIZATION, FORBIDDEN ZONE WIDTH,
TEMPERATURE DEPENDENCE, PHASE TRANSITION, MELTING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0063   STEP NO--UR/0181/70/012/001/0279/0281

CIRC ACCESSION NO--AP0105160
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0105160

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COEFFS. OF THERMAL COND., LAMBDA, OF GA, IN, TL TELLURIDES WERE MEASURED UNDER STEADY STATE CONDITIONS FOR DIRECT AND REVERSE TEMP. CHANGES DURING CRYSTN. AND MELTING. TEMP. DEPENDENCE OF LAMBDA IS GIVEN FOR GATE. THE TRANSITION FROM THE SOLID INTO THE LIQ. PHASE TAKES PLACE WITHOUT A SHARP VARIATION IN THE CHARACTER OF THE TEMP. DEPENDENCE. THE LORENTZ NO., CALCD. FROM THERMAL AND ELEC. COND., IS CHARACTERISTIC OF A NONDEGENERATE SEMICONDUCTOR AND AS TEMP. INCREASES, IT REACHES THE THEORETICAL VALUE CHARACTERISTIC OF A METAL. COMPARISON OF DATA FOR GATE AND GA SUB2 TE SUB3 SHOWS THAT GATE HAS A BROADER FORBIDDEN BAND DUE TO THE EFFECT OF COVALENT BONDING AS COMPARED WITH GA SUB2 TE SUB3. THE PAHSE TRANSITION IN TLTE IS CHARACTERIZED BY A JUMP IN THERMAL COND. AND A DECREASE IN THE LIQ. PHASE. IN GOING FROM GA TO TL TELLURIDE, AN INCREASINGLY STRONGER HEAT TRANSPORT IS PRESENT AS A RESULT OF DIFFUSION OF CURRENT CARRIERS. THIS MAY BE EXPLAIED AS A BIPOLAR TRANSPORT. FACILITY: MOSK. ENERG. INST., MOSCOW, USSR.

UNCLASSIFIED

104721p Thermal conductivity of liquid thallium tellurides.
Fedorov, V. I.; Machuev, V. I. (Mosk. Energ. Inst., Moscow,
USSR). Fiz. Tverd. Tela 1970, 12(2), 651-4 (Russ). In a
narrow temp. interval elec. and thermal properties were investi-
gated of the title compds. in the liq. phase. Tl tellurides Tl$_2$-
Te$_3$, TlTe, and Tl$_2$Te were prepd. by direct melting of pure Tl and
Te. Temp. dependence is given of the coeffs. of thermal cond. of
liq. Tl tellurides. Monotonic character of the variation of
thermal cond. parallels that of elec. properties. No discontinuity
is obsd. on passing from solid to liq. As the amt. of Te increases
the exptl. Lorentz no. approaches the theoretical value, thereby
indicating a decreasing effect of addnl. mechanisms of heat
transfer as compared to the transfer by current carriers.

A. Libackyj

REEL/FRAME
19801846

USSR

BRAZIS, R. S., VALATSKA, K. K., MACHYULAYTIS, Ch. V., POZHELA, Yu. K.,
Institute of Physics of Semiconductors, Academy of Sciences of the Lithu-
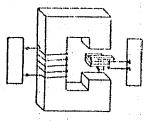anian SSR

"An Amplitude Modulator"

Translation: This Author's Certificate introduces an amplitude modulator
which contains a supply source connected to the winding of an electro-
magnet, and a semiconductor plate which is placed in the fixed magnetic
field of the electromagnet perpendicular to its broad planes. The device
also contains carrier-frequency input and output circuits placed across
the wide faces of the plate, and a source of modulating voltage. As a
distinguishing feature of the patent, speed is increased by making the
semiconductor plate with deep-lying plane junctions (e. g. of the PN type),
and by connecting the ohmic contacts on both sides of the junction directly
to the source of modulating voltage.

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USSR

BRAZIS, R. S. et al., USSR Author's Certificate No 326700

2/2

— 57 —

USSR

UDC 678.632'543'21.01.03

MACHYULIS, A. H., PTSEVICHUS, P. P., ANGRUKAVICHENE, L. F., LECOVICHTE, B. I., and BERLIN, A. A.

"The Effect of Stabilization and Thermal Treatment on the Ablation of Phenol-Formaldehyde Plastics"

Moscow, Plasticheskiye Massy, No 3, 1972, pp 53-56

Abstract: A study of the ablation stability and breakdown of phenolformaldehyde plastics (PFP) stabilized with polymers with a system of conjugated bonds (PCB) was carried out. The effect of preliminary thermal treatment of a stabilized phenol-formaldehyde resin on its physical-mechanical and ablation properties was also investigated. The following stabilizers were used: polyacenaphthene, polyphenylenequinone, polyoctamethylenequinoline, polyphenylenetrophthalene, polyquinone dioxime, and a polymer of p-phenylenediamine and bis-benzidine. In general, the stabilized PFP showed lower weight loss and fewer macrodefects of the structure than the nonstabilized ones. The direction of ablation breakdown of both the stabilized and starting PFP appeared to be identical. In an inert medium the ablation breakdown of PFP is slower than in an oxidizing medium, but the effectiveness of stabilizing additives is also lower. Thermal treatment of stabilized PFP to also effective only to 200°C in increasing the strength and ablation stability
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USSR

MACHYULIS, A. N., et al., Plasticheskiye Massy, No 3, 1972, pp 53-56

stabilized with PCB. Higher temperatures lead to formation of cracks, weight loss and poorer physical-mechanical properties.

2/2

USSR

UDC 531.38:62.503.3

MADATOV, G. L., and CHERNOVSKAYA, S. S., Dnepropetrovsk Department of the
Institute of Mechanics, Academy of Sciences, Ukrainian SSR

"Analysis of the Disturbed Motion of a Solid, With Cavities Partially Filled by
a Liquid"

Abstract: The disturbed motion of a solid, with cavities partially filled by
a liquid, is represented in the form of the sum of rapid motion and slow motion.
An approximate solution of the equations of rapid motion is obtained in the form
of a function of the slow motion. Analytical expressions are presented for
determining the roots of the characteristic equation of the closed system and
the amplitude of oscillator-determined oscillations. 2 figures. 1 table. 3
references.

1/1

USSR   UDC 621.791.89.042:546.212

MADATOV, N. M., Candidate of Technical Sciences

"Selection of Filler Wire for Semiautomatic Underwater Welding"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 70, pp 37-39

Abstract: The quality of a welded joint produced under water depends to
a significant extent on the selection of the filler material. Studies
were performed to select the best filler wire from types Sv-12GS, Sv-08G2S,
and five wires of various compositions designed for operations in building
slips and field conditions. The welding technology characteristics were
evaluated on the basis of stability of arc burn and formation of the seam
at optimal current levels. The best technological and strength properties
were produced by Sv-08G2S wire (chem. composition: (%) C 0.10, Mn 2.10, Si
0.89, S 0.03, P 0.03), which can be recommended for semiautomatic under-
water welding of low-carbon and low-alloy steels. The plasticity of
joints welded under water can be improved by controlling the process of
metal transfer, developing special wires, and replacing carbon dioxide
with other gases or mixtures.

1/1

USSR   UDC 621.791(204.1).004.13

MADATOV, N. M., Candidate of Technical Sciences

"Effect of Underwater Welding Parameters on the Intensity of
Metallurgical Reactions"

Moscow, Svarochnoye Proizvodstvo, No 12, Dec 70, pp 12-14

Abstract: The article describes results of a study of metallur-
gical processes in underwater welding and the effect of various
factors on the composition of the deposited metal. It is shown
that in underwater welding with thin wire the character of the
metal transfer in the arc and the intensity of the metallurgical
reactions depend on the process parameters, as well as external
conditions. The principal factor determining the intensity of
the metallurgical reactions is the interaction between the mol-
ten metal during the formation of the drop at the end of the
electrode and its passage from electrode to bath, on the one
hand, and the surrounding atmosphere of the bubble, on the other.
The gases contained in the drop pass through the walls as the
drop moves in the bubble, reacting with the metal, i. e. the en-
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USSR

MADATOV, N. M., Svarochnoye Proizvodstvo, No 12, Dec 70, pp 12-14

tire volume of the drop, rather than just its surface, takes part in the reaction. It is suggested that the conditional reactivity coefficient C_n be used to estimate the intensity of the metallurgical reactions, in accordance with the method of A. G. POTAP'YEVSKIY. The use of the underwater welding reactivity coefficient C_n permits an objective and graphic idea concerning the intensity of the metallurgical reactions for various underwater welding techniques. Not only different techniques can be evaluated, but also the conditions of each individual technique.

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USSR   M   UDC 621.791.947.55.001.5:66.062.1

MADATOV, N. M., Candidate of Technical Sciences, and VEKSLER, M. A., Candidate of Chemical Sciences

"Mathematical Planning of an Experiment (Using as an Example the Underwater Plasma-Arc Cutting of Metals")

Moscow, Svarochnoye Proizvodstvo, No 6, Jun 70, pp 26-28

Abstract: Experience in applying the "stepped" method, suggested by G. E. P. Box and K. B. Wilson for the mathematical planning of experiments, to the investigation of the underwater plasma-arc cutting process is described in detail. The rate of underwater plasma-arc cutting was selected as the optimization criterion, inasmuch as it affects the time a man remains underwater, which is limited. Various factors affecting the process (arc voltage, cutting current, expenditure of plasma forming gases, technical characteristics of power supply, plasmatron construction features, etc.) were selected and coded. A planning matrix for the experiments was constructed. The determination of the quantitative effect of each selected factor on the optimization criterion is the fundamental problem of matrix construction. An analysis showed that the effect of each factor, separately and collectively, on cutting rate can be determined only after eight experiments. All experiments on cutting St3 steel (20 mm thick) were conducted under laboratory conditions on 1/2

USSR

MADATOV, N. M. and VEKSLER, M. A., Svarochnoye Proizvodstvo, No 6, Jun 70, pp 26-28

an OPR-type installation. The results can be presented in a mathematical model in the form of a regression equation, which, after certain transformations, yields an equation showing that the cutting current has the greatest effect on cutting rate. The application of mathematical planning made it possible to obtain a high rate of cutting low-carbon steel (785 mm/min at 600 amp). 10 formulas, 5 tables, 4 references.

2/2

UNCLASSIFIED

TITLE--ON THE INFLUENCE OF CERTAIN TECHNOLOGICAL FACTORS ON THE PROCESS OF
UNDERWATER WELDING WITH USE OF THIN WIRE -U-

PROCESSING DATE--23OCT70

AUTHOR--MADATOV, N.M.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SVAROCHNOYE PROIZVODSTVO, NO 1, 70, PP 30--32

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--FINE WIRE, UNDERWATER WELDING, WELDING TECHNOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/2034

STEP NO--UR/0135/70/000/001/0030/0032

CIRC ACCESSION NO--AP0118988

UNCLASSIFIED

CIRC ACCESSION NO--AP0118988
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS ARE PRESENTED OF A
   STUDY OF THE EFFECT OF THE CURRENT PATH LENGTH AND SLOPE OF THE
   ELECTRODE ON THE PROCESS OF THE UNDERWATER WELDING WITH USE OF A THIN
   WIRE. THE TECHNOLOGICAL RECOMMENDATIONS ARE APPENDED.

UNCLASSIFIED

USSR m UDC 621.791.011(204.1)

MADATOV, N. M., Candidate of Technical Sciences

"The Effect of Some Technological Factors on the Process of Underwater Welding With Thin Wire"

Moscow, Svarochnoye Proizvodstvo, No 1, Jan 70, pp 30-32

Abstract: Underwater welding with thin wire was carried out at a constant no-load voltage of 53 v and with an electrode stick-out of 8 to 25 mm, to determine the effect of electrode stick-out length on the progress of the welding process. It was found that the optimal length of electrode stick-out is 10--14 mm. Larger or smaller stick-out length worsens the stability of the process and its technological characteristics. The best outer appearance of the weld and the smallest amount of splattering was obtained at an electrode stick-out length of 12 mm. It was also found that the angle of electrode incline affects the weld quality. The best results were obtained with an electrode incline of 55--65° to the horizontal plane.

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1/2   030   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--LIGHT STABILIZING PROPERTIES OF SYNTHETIC LEATHER BASED ON
  POLY(VINYL CHLORIDE) MODIFIED BY LIGNIN -U-

AUTHOR-(03)-MADATOVA, D.M., SAVRANSKAYA, S.D., MADSUDOV, S.M.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(1), 46-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LEATHER, POLYVINYL CHLORIDE, LIGNIN, TENSILE STRENGTH,
  ELASTICITY, PHOTOEFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1839   STEP NO--UR/0291/70/014/001/0046/0049
CIRC ACCESSION NO--AP0123628
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0123628
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXPOSURE OF PLASTICIZED
  POLY(VINYL CHLORIDE) (I) ARTIFICAL LEATHER TO SUNLIGHT AND ATM.
  CONDITIONS CAUSES THE DECREASE OF ITS TENSILE STRENGTH AT BREAK (SIGMA)
  AND ELASTICITY. THE AGING COEFF. (KAPPA), DEFINED AS (INITIAL SIGMA)
  PER (FINAL SIGMA) TIMES 100, OF THE UNSTABILIZED I DECREASED BY
  60--70PERCENT IN 3 MONTHS. I CONTG. 5-10PERCENT COTTON LIGNIN OR PINE
  LIGNIN RETAINED 90-5PERCENT KAPPA VALUE DURING THE SAME AGING PERIOD.
      FACILITY: INST. KHIM., TASHKENT, USSR..

UNCLASSIFIED

USSR

UDC 51.621.391

MADATYAN, Kh. A.

"Complete Test for Non-repeating Contact Circuits"

Probl. Kibernetiki [Problems of Cybernetics -- Collection of Works], No. 23, Moscow, Nauka Press, 1970, pp 103-118 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V491).

Translation: This work is dedicated to problems of the testing of control systems. The length of a complete diagnostic test for contact circuits is estimated; a complete diagnostic test is constructed and its length is estimated for nonrepeating circuits; a minimal test is constructed for nonrepeating π circuits. A simple algorithm for testing is indicated for the latter.

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1/3   045
UNCLASSIFIED
PROCESSING DATE--23OCT70
TITLE--INCREASE IN THE INTENSITY OF SOLAR PROTONS MEASURED ON THE 'PROTON 3' ARTIFICIAL EARTH SATELLITE -U-

AUTHOR-(04)-ZELDOVICH, M.A., KOVRIZHNYKH, O.M., MADEYEV, M.O., SAVENKO, I.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MOSKOVSKOGO UNIVERSITETA, FIZIKA, ASTRONOMIYA, NO 2, 1970, PP 229-230

DATE PUBLISHED-------70

SUBJECT AREAS--SPACE TECHNOLOGY, PHYSICS, ASTRONOMY, ASTROPHYSICS, ATMOSPHERIC SCIENCES

TOPIC TAGS--PROTON, SOLAR FLARE, RADIO EMISSION, SPACECRAFT CARRIED EQUIPMENT, QUARK, PRIMARY COSMIC RAY, PROPORTIONAL COUNTER, TELESCOPE, SPECTRUM, SOLAR RADIATION BURST, SOLAR RADIATION INTENSITY, RADIATION MEASURING INSTRUMENT/(U)SEZ 13 INSTRUMENT, (U)PROTON 3 SCIENTIFIC SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0860

STEP NO--UR/0188/70/000/002/0229/0230

CIRC ACCESSION NO--AP0126529

UNCLASSIFIED

CIRC ACCESSION NO--AP0126529
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SEZ-13 INSTRUMENT CARRIED
ABOARD THE "PROTON 3" INSTRUMENT ON 7 JULY 1966 REGISTERED AN INCREASE
IN PROTON INTENSITY IN THE ENERGY RANGE 100 TO 1,000 MEV. THE INTEGRAL
SPECTRUM OF SOLAR PROTONS HAS THE FORM N SIMILAR TO E PRIME NEGATIVE1.5.
AN OPTICAL FLARE OF THE IMPORTANCE 2B ON THAT DATE LASTED ABOUT TWO
HOURS. THIS FLARE WAS ACCOMPANIED BY AN X RAY BURST AND TYPES II AND IV
RADIO EMISSION. THIS ARTICLE GIVES THE RESULTS OF MEASUREMENTS OF THE
BURST OF SOLAR PROTONS ON 7 JULY 1966 WITH INSTRUMENTATION CARRIED
ABOARD "PROTON 3.". THIS SATELLITE WAS LAUNCHED ON 6 JULY 1966 IN A
CIRCUMTERRESTRIAL ORBIT WITH AN APOGG OF 630 KM, APOGEE OF 190 KM AND
ORBITAL INCLINATION OF 64DEGREES. THE SATELLITE CARRIED NO INSTRUMENT
SPECIALLY DESIGNED FOR MEASURING LOW ENERGY PROTONS. ACCORDINGLY, DATA
ON THE BURST OF 7 JULY WAS OBTAINED AS A RESULT OF MEASUREMENTS WITH THE
SEZ-13 INSTRUMENT, WHOSE BASIC PURPOSE WAS A SEARCH FOR QUARKS IN
PRIMARY COSMIC RAYS BEYOND THE LIMITS OF THE ATMOSPHERE. THE SEZ-13
INSTRUMENT CONSISTS OF 12 PROPORTIONAL COUNTERS FORMING A TELESCOPE.
THE PROTONS COULD ENTER THE TELESCOPE ANGLE OF VIEW FROM TWO OPPOSITE
DIRECTIONS. A LATITUDINAL INTENSITY VARIATION WAS OBSERVED BECAUSE THE
SATELLITE INTERSECTED GEOGRAPHIC LATITUDES FROM 0 TO 64DEGREES. IT WAS
CONFIRMED THAT THE SPECTRUM OF SOLAR PROTONS HAS THE FORM N SIMILAR TO E
PRIME NEGATIVE 1.5.

UNCLASSIFIED

CIRC ACCESSION NO--AP0126529
ABSTRACT/EXTRACT--PRELIMINARY DATA INDICATE THAT THE INTENSITY OF GALACTIC
COSMIC RAYS WITH ENERGIES IS GREATER THAN 1,000 MEV AND WITH ENERGIES IS
GREATER THAN 10,000 MEV IS 0.64 PARTICLE CM PRIME NEGATIVE1. SEC PRIME
NEGATIVE1. STERAD PRIME NEGATIVE1 AND 0.127 PARTICLE CM PRIME NEGATIVE2.
SEC PRIME NEGATIVE1. STERAD PRIME NEGATIVE1.   THESE INTENSITIES CAN BE
SOMEWHAT EXAGGERATED BECAUSE NO ALLOWANCE WAS MADE FOR SECONDARY
RADIATION FORMING DURING THE ABSORPTION OF HIGH ENERGY GALACTIC COSMIC
RAYS IN THE MATERIAL OF THE SATELLITE.   FACILITY: NUCLEAR
PHYSICS SCIENTIFIC RESEARCH INSTITUTE, MOSCOW UNIVERSITY.

UDC 621.039.51

USSR

MADEYEV, V. G. and UKSUSOV, YE. I.

"Investigating Reactions $^{31}P(n, p)^{31}Si$ for Absolute Measurements of the Fast-Neutron Fluxes in Experiments on Reactors"

Moscow, Metrology of Neutron Radiation on Reactors and Accelerators, 71, p 120 (from RZh--Vadernyye Reaktory Otdel'nyy Vypusk, No 1, '72, Abstract No 1.50.90)

Abstract: Nuclear-physical characteristics of phosphorus are discussed which facilitate its application in measurements of the absolute fluxes of fast neutrons during the course of experimental research on nuclear reactors. The technology of the preparation of phosphorus indicators and a method of calibration based on a comparison of neutron emission from a radioactive source with the known spectral distribution and intensity are described. A counting device and method of measurement are described. Fields of application of the given method are indicated, and also both the accuracy of measuring fast-neutron flux magnitudes and the ways for improving it are analyzed.

1/1

Abstracting Service Ref. Code:
CHEMICAL ABST.   UR 0409

90179d Preparation of pyrrole derivatives. Makhsumov, A. G.; Safaev, A. S.; Madikhanov, N. (Sredneaziat. Nauch.-Issled Inst. Neftepererab., Tashkent, USSR). *Khim. Geterotsikl. Soedin.* 1970, (1), 125–6 (Russ). 1-Phenyl-2,5-bis(o-nitrophenoxy)pyrrole (I) was prepd. from the diacetylene glycol deriv. and PhNH₂. Thus, equimolar amts, bis(o-nitrophenoxy)-2,4-hexadiyne, PhNH₂, and Cu₂Cl₂ were heated in an org. solvent 1 hr at 160–5° to give 67% I, m. 113–16° (hexane).

Z. Jacura

REEL/FRAME
19801897

7

Acc. Nr.
AP0053761   Abstracting Service: Ref. Code
            CHEMICAL ABST.   UR0366

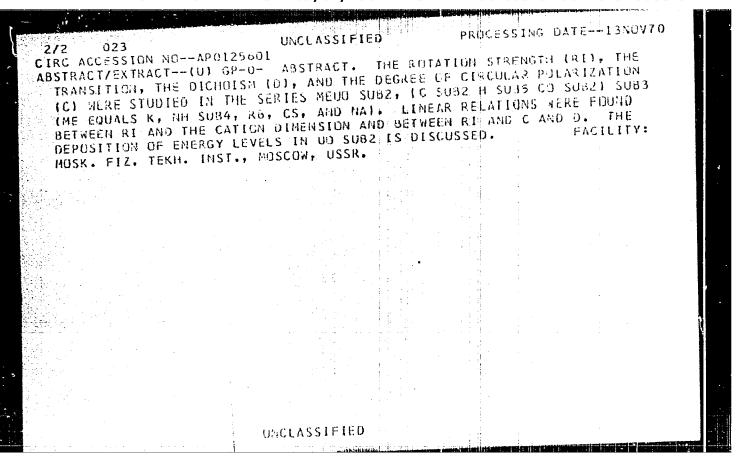111206c Preparation of 2,5-disubstituted pyrroles. Makhsu-
mov, A. G.; Safaev, A.; Madikhanov, N. (USSR). Zh. Org.
Khim. 1970, 6(2), 401-2 (Russ). The condensation of NH$_3$
under pressure with ROCH$_2$C:CC:CCH$_2$OR (R is 2,4,6-Cl$_3$-
C$_6$H$_2$, 2,4,6-Br$_3$C$_6$H$_2$, or 2,4,6-I$_3$C$_6$H$_2$) in an org. solvent contg.
CuCl gave 2,5-bis(ROCH$_2$-substituted)pyrroles.   CPJR

REEL/FRAME
19830824

UNCLASSIFIED   PROCESSING DATE--13NOV70

1/2   023

TITLE--CORRELATION OF THE LUMINESCENT AND SYPOTROPIC PROPERTIES OF URANYL
COMPOUNDS WITH THEIR STRUCTURES -U-

AUTHOR-(05)-BURKOV, V.I., KIZEL, V.A., KRASILOV, YU.I., MADIY, V.A.,
AKIKHANOVA, Z.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 572-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--LUMINESCENCE, URANIUM COMPOUND, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2013   STEP NO--UR/0048/70/034/003/0572/0575

CIRC ACCESSION NO--AP0125601

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125601
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ROTATION STRENGTH (RI), THE
TRANSITION, THE DICHOISM (D), AND THE DEGREE OF CIRCULAR POLARIZATION
(C) WERE STUDIED IN THE SERIES MEUO SUB2, (C SUB2 H SUB5 CO SUB2) SUB3
(ME EQUALS K, NH SUB4, RB, CS, AND NA). LINEAR RELATIONS WERE FOUND
BETWEEN RI AND THE CATION DIMENSION AND BETWEEN RI AND C AND D. THE
DEPOSITION OF ENERGY LEVELS IN UO SUB2 IS DISCUSSED.   FACILITY:
MOSK. FIZ. TEKH. INST., MOSCOW, USSR.

UNCLASSIFIED

MADIYEVSKIY, YU. M.

ACC NR: AP6024652

AUTHOR: Dvul', Yu. A.; Madiyevskiy, Yu. M.

ORG: Khar'kov State Pedagogic Institute im. G. S. Skovoroda (Khar'kovskiy gosudarstvennyy pedagogicheskiy institut)

TITLE: Effect of constant magnetic and low frequency electromagnetic fields on the hydration capacity of tissues

SOURCE: Biofizika, v. 11, no. 4, 1966, 631-637

TOPIC TAGS: magnetic field, electromagnetic field, magnetic biologic effect, animal experiment, magnetobiology, tissue hydration

Card 1/2

ABSTRACT: Experiments were conducted on 105 male rats weighing 150—180 g and maintained on a normal diet. Preparations of internal organs were made after decapitation (one day after final feeding). An experimental and a control preparation were used in each case. Experimental preparations in regular banks were placed between the poles of an electromagnet and exposed to fields of from 1.0—1.5 mm from the poles of an electromagnet. After the current was 20,000 oe. Duration of exposure was 1 min in all tests. Control prepara- tions were treated identically to experimental preparations but were not exposed to the magnetic field. It was found that a 1 min exposure to constant EMF's of 20,000 oe caused statistically reliable (± 0.95%) changes in the hydration ability of not tissue. These shifts could not be attributed to a thermal effect or the effect of

Card 1/2

ACC NR: AP6024632

switching the field on or off. The dependence between the degree of the maximum hydration capacity of various tissues and the constant magnetic field voltage assumed a phase character in that a decreased phase was a precursor of an increased phase of maximum hydration capacity. As a rule, the order of sensitivity of organs to alteration (according to maximum hydration capacity) was identical during the action of a constant magnetic field and other stimuli. The most resistant organs were the brain, kidney, and liver, while cardiac muscle, intestine, spleen, testicles, and skeletal muscles were less resistant. In analogous through slightly amplified trend in changes in tissue hydration capacity occurred after exposure to low frequency EMF's of 3 cps (1000—2000 oe) and 50 cps (500—2000 oe). The 3-cps field was less effective than the 50-cps field. Presently, the mechanism of the effect of constant and low frequency EMF's on tissue hydration capacity is unknown. Both fields can cause paramacrotic reactions in tissue which do not distinguish them from other stimuli. More research along these lines is required. Orig. art. has: 1 table.

So: Libraries ADDRESS Lec Stat, GPC6C UNCL.

Card 2/2

- 1 (5/47) -

UNCLASSIFIED   PROCESSING DATE--09OCT70

1/2   021
TITLE--USE OF "ADRENALINE TEST" FOR ESTIMATION OF THE INDIVIDUAL
SENSITIVENESS OF ANIMALS TO ANTI NEOPLASM REMEDIES --U-
AUTHOR-(02)-KHILKO, A.S., MADLEVSKIY, YU.M.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHNIY ZHURNAL, 1970, VOL 16, NR 3, PP 351-356

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ADRENALINE, TEST, ANTINEOPLASTIC DRUG, DRUG SENSITIVITY,
LEUKOCYTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1118   STEP NO--UR/0238/70/016/003/0351/0356

CIRC ACCESSION NO--AP0115137
                        UNCLASSIFIED

2/2   021
CIRC ACCESSION NO--AP0115137

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DEPENDENCE WAS STUDIED BETWEEN
THE VALUE OF "ADRENALINE TEST" (AT) BEFORE INJECTION OF THIO TEPA (T)
AND LEUCOCYTE'S CONTENT (L) IN RAT PERIPHERAL BLOOD AFTER INJECTION OF T
IN DOSES OF 3 MG-KG EVERY DAY, IN TOTAL DOSES OF 9 AND 15 MG-KG AND IN
SINGLE ONE OF 20 MG-KG.   THE NUMBER L TWO HOURS AFTER INJECTION OF 0.25
MG ADRENALINE PER KG OF BODYWEINGT WAS A AT INDEX.   ADMINISTRATION OF T
CAUSES THE DROP IN THE NUMBER L WHICH IS NORMALIZED AT DOSES 9 AND 15
MG-KG, RESPECTIVELY BY THE 9TH AND 16TH DAY. WITH A DOSE OF 20 MG-KG
THE NUMBER L LOWERS RIGHT UP TO THE ANIMALS' DEATH.   THERE IS A REAL
CORRELATION BETWEEN THE VALUE OF AT AND NUMBER L AFTER ADMINISTRATION OF
T (9-15 MG-KG).   THE HIGHER AT THE LOWER THE NUMBER L AND THE SOONER
COMES RECOVERY OF THE LEUCOCYTE'S CONTENT. WITH A DOSE OF 20 MG-KG THE
MENTIONED CORRELATION WAS NOT FOUND.   FACILITY: DEPARTMETN OF
ANATOMY AND PHYSIOLOGY, THE KHARKOV PEDAGOGICAL INSTITUTE.

USSR

MADIYEVSKIY, YU. M., et al., Kiev, Fiziolohichnyy Zhurnal, Vol 16, No 1, Jan/Feb 70, pp 96-102

depression of the initial blood composition is noted, and the faster is the recovery. With radiation levels of 500-700 r, such a correlation appears only after about 14 days in surviving animals (during the recovery period). No relationship was found for the 1200 r dose. At 500 r, the day of death of the animals was closely related to the adrenalin test.

2/2

- 34 -

SIGNIFICANCE OF "ADRENALINE TEST" FOR ESTIMATION OF INDIVIDUAL SENSITIVENESS OF ANIMALS TO X-IRRADIATION

Yu. M. Madievskiy A. S. Khilko

Department of Anatomy and Physiology, Pedagogical Institute, Kharkov

Summary

The alterations were studied of peripheral blood leucocyte content in rats after injecting 0.25 mg of adrenaline per kg of body-weight ("adrenaline test") in connection with the dependence between its value and the leucopenia level after X-irradiation.

There was a real correlation between an increase in the amount of leucocytes in "adrenaline test" and the rapidity of recovery leucocyte content in rats exposed to 50—700 r total irradiation. After exposing to 1200 r all the animals died and the above-mentioned correlation did not take place. The mean lifetime of irradiated by 500—700 r rats was also closely connected with previous "adrenaline test" values of the same animals.

REEL/FRAME
19820903

USSR

UDC 534.86

MADORSKIY, V. V., USTINOV, YU. A.

"Evaluating the Homogeneity of the Mechanical Stress Field in Piezoceramic Discs"

V sb. P'yezoelektrich. materialy i preobrazovateli (Piezoelectric Materials and Converters -- Collection of Works), Rostov-na-Donu, Rostov University, 1971, pp 65-80 (from RZh-Fizika, No 3, Mar 72, Abstract No 3Zh556)

Translation: The problem of stress distribution in a piezoceramic disc located between washers under an external, one-dimensional stress normal to the faces of the disc is solved. The problem is solved with and without consideration of friction between the washers and the sample. The solution was obtained by elasticity theory methods with simplifying assumptions: (1) the piezoceramic is isotropic; (2) the washers are absolutely rigid; (3) the coefficient of friction between the washers and the piezoelement is independent of pressure. Analysis of the solution shows that the smaller the relative thickness of the sample, the broader the region of the homogeneous stress field and that for small values of the coefficient of friction the stresses in the disc are practically homogeneous. S. A. Yausheva.

1/1

USSR   UDC 621.382.2

AVETISYAN, G.KH., ZUBKOV, A.M., MADOYAN, S.G.

"Investigation Of $n^+ Ga_{1-x}In_x$ As--p^+GaAs Tunnel Heterojunctions"

V sb. Arsenid galliya (Gallium Arsenide--Collection Of Works), Issue 3, Tomsk, Tomsk University, 1970, pp 145-151 (from Rzh--Elektronika i yeye primeneniye, No 3, March 1971, Abstract No 3B399)

Translation: The voltampere characteristics are investigated of tunnel diodes made with type n^+GaInAs--p^+GaAs heterojunctions. The dependence is studied of the properties of heterojunctions on the composition of the electrode material, on the polarity of the surface (111), and on the ambient temperature. A comparison is made of the voltampere characteristics with homogeneous and heterogeneous p-n junctions. A tunnel diode with a heterogeneous p-n junction is inferior in its characteristics to a tunnel diode with a conventional p-n junction. 4 ref. Summary.

1/1

USSR

UDC 621.382.002

FEDOTOV, YA.A., MADOYAN, S.G., AVETISYAN, G.KH., HANAGAROV, V.D., REFNIKOV,G.I.

"Properties Of $^+$Ge-nGaAs Structure Prepared By The Liquid Epitaxy Method"

Translation: The optimum conditions were determined for the growth of high-quality layers of Ge on GaAs by the liquid epitaxy method (from a solution in Ge). The optimum supercooling of the solution for preparing ideal layers was calculated. (It was found to be $\sim 15^\circ$ C.) The calculation was confirmed by experiment. With supercoolings above 50° C the perfection of the layers sharply deteriorated. Heterojunctions of p$^+$Ge--nGaAs were prepared without intermediate layers of the solid solution Ge + GaAs and without a "false" junction at the interface resulting from diffusion of arsenic in the Ge. 9 ref. Ye.G.

1/1

UNCLASSIFIED   PROCESSING DATE--18SEP70

TITLE--COMPARATIVE STUDY OF THE FORMATION OF FREE AMINO ACIDS BY LOCAL
THERMOPHILIC, LACTIC ACID BACTERIA -U-

AUTHOR-(03)-OGAY, D.K., MUSAEYV, SH.M., NADRAKHIMOV, YU.

COUNTRY OF INFO--USSR

SOURCE--PRIKL. BIOKHIM. MIKROBIOL. 1970, 6(1), 103-6

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINO ACID, LACTIC ACID, BACTERIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/0359   STEP NO--UR/0411/70/006/001/0103/0106

CIRC ACCESSION NO--AP0100846
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0100846
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTS. WERE PERFORMED ON FREE
   AMINO ACIDS ACCUMULATION IN CASEIN MEDIUM BY THE THERMOPHILIC LACTIC
   ACID BACTERIA LACT(OBACILLUS) THERMOPHILUS 172, L. BULGARICUS 176, AND
   STR(EPTOCOCCUS) THERMOPHILUS 6 AND 132.   INCUBATION WAS AT 45DEGREES
   FOR 24, 48, 96, AND 168 HR. ALL INVESTIGATED BACTERIA ACCUMULATED 16
   FREE AMINO ACIDS. THE AMT. AND PROPORTION OF THESE AMINO ACIDS VARIED,
   DEPENDING ON THE TIME OF CULTIVATION, SPECIES, AND STRAIN OF THE
   MICROORGANISM.

UNCLASSIFIED

USSR

UDC: 621.315.612.5

MATYUKHIK, V. F., ABURAMOTO, I., MADRICHENKO, G. F.

"Determination of Losses of SHF Energy in Ceramic-to-Metal Seals"

Translation: A method is described for SHF measurement of the surface resistivity of metal-ceramic junctions by means of a double T-shaped bridge. It is shown that the surface resistivity of metal-to-ceramic seals is approximately an order of magnitude greater than for silver. Resumé.

1/1

ELIZ.YUK, .. K., KVASHA, Z. N., VAiSHAVSKIY, S. L., and MADSHARA, G. A.,
All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry
of Agriculture USSR

"A Method of Preparing Mixed Esters of Dithiophosphonic Acids"

USSR Authors; Certificate No 222384, filed 26 Oct 66, published 20 Jan 70
(from Referativnyy Zhurnal Khimiya, No 17, 10 Sept 70, Abstract No 17 N594 F)

Translation: A mixture of 0.03 g-mole of acid chloride of S-ethyl methylthio-
phosphante, 0.12 g-mole alcohol, 1 mol% P_2S_5 and 2 mol% pyridine is heated for
4 hours at 90-100°C, and O,S-diethyldithiophosphonate, $C_5H_{13}OPS_2$, is
isolated with a yield of 82% and a boiling point of 78-80°C/2, n^{20}_D =
1.5310. O-Methyl-S-phenyldithiomethylphosphonate $C_8H_{11}OPS_2$ is also prepared
with a yield of 100%, melting point of 46-7°C, N^{20}_D = 1.6125.

T. A. Belyayeva

1/1

1/2   030   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--LIGHT STABILIZING PROPERTIES OF SYNTHETIC LEATHER BASED ON
  POLY(VINYL CHLORIDE) MODIFIED BY LIGNIN -U-
AUTHOR-(03)-MADATOVA, D.M., SAVRANSKAYA, S.D., MADSUDOV, S.M.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(1), 46-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LEATHER, POLYVINYL CHLORIDE, LIGNIN, TENSILE STRENGTH,
  ELASTICITY, PHOTOEFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1839   STEP NO--UR/0291/70/014/001/0046/0049

CIRC ACCESSION NO--AP0123628
                           UNCLASSIFIED

CIRC ACCESSION NO--AP0123628
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXPOSURE OF PLASTICIZED
POLY(VINYL CHLORIDE) (I) ARTIFICAL LEATHER TO SUNLIGHT AND ATM.
CONDITIONS CAUSES THE DECREASE OF ITS TENSILE STRENGTH AT BREAK (SIGMA)
AND ELASTICITY. THE AGING COEFF. (KAPPA), DEFINED AS (INITIAL SIGMA)
PER (FINAL SIGMA) TIMES 100, OF THE UNSTABILIZED I DECREASED BY
60-70PERCENT IN 3 MONTHS. I CONTG. 5-10PERCENT COTTON LIGNIN OR PINE
LIGNIN RETAINED 90-5PERCENT KAPPA VALUE DURING THE SAME AGING PERIOD.
FACILITY: INST. KHIM., TASHKENT, USSR..

UNCLASSIFIED

1/2   017   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--END WINDOW MINIATURE COUNTER FOR SOFT BETA RADIATION -U-

AUTHOR-(04)-BESKORSKIY, A.I., PERUYSHEV, E.V., MADUYEV, V.L., CHECHETINA,
  N.A.
COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 66-7

DATE PUBLISHED-------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--BETA PARTICLE DETECTOR, GAMMA BACKGROUND, MICA, RADIATION
  COUNTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1881   STEP NO--UR/0120/70/001/000/0066/0067

CIRC ACCESSION NO--AP0108211
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0108211
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MINIATURE BETA COUNTER WITH AN
  END WINDOW IS DESCRIBED WHICH IS CONVENIENT FOR CONTROLLING BETA
  RADIATION ON GAMMA BACKGROUND NOISE IN VACUUM. THE DIMENSIONS AND
  THICKNESS OF THE MICA WINDOW OF THE COUNTER ARE SIGNIFICANTLY SMALLER
  THAN IN INDUSTRIAL VERSIONS OF SIMILAR DEVICES. THE CONSTRUCTION AND
  PARAMETERS ARE GIVEN.

UNCLASSIFIED

TITLE--MEASUREMENT OF THE ABSORBED DOSE OF COSMIC RADIATION ON THE
'KOSMOS-228' SATELLITE -U-

AUTHOR-(02)-MAKHMUDOV, B.M., MAOUYEV, V.L.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MOSKOVSKOGO UNIVERSITETA, FIZIKA, ASTRONOMIYA, NO
2, 1970, PP 225-229

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, SPACE TECHNOLOGY, PHYSICS

TOPIC TAGS--ARTIFICIAL EARTH SATELLITE, RADIATION MEASURING INSTRUMENT,
COSMIC RADIATION, SCINTILLATION COUNTER, IONIZATION CHAMBER, GAS
DISCHARGE COUNTER, RADIATION DOSAGE, PRIMARY COSMIC RAY, RADIATION BELT,
MAGNETIC ANOMALY, PROTON, SPACECRAFT CARRIED EQUIPMENT/(U)SIZBG COUNTER,
(U)COSMOS 228 SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0852   STEP NO--UR/0188/70/000/002/0225/0229

CIRC ACCESSION NO--AP0126525
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0126525
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTIFICIAL EARTH SATELLITE
"KOSMOS-228" CARRIED RADIOMETRIC APPARATUS FOR INVESTIGATING COSMIC
RADIATION AT LOW ALTITUDES. THE INSTRUMENTATION CONSISTED OF A
SCINTILLATION COUNTER, IONIZATION CHAMBER AND FIVE GAS DISCHARGE
COUNTERS, THREE OF WHICH HAD MAGNETIC ELECTRON ANALYZERS. PART OF THE
"KOSMOS-228" EXPERIMENTAL PROGRAM WAS DOSIMETRIC MEASUREMENTS ALONG THE
SATELLITE FLIGHT PATH. THE DOSE WAS MEASURED FROM THE ENERGY RELEASE IN
A CSI(TL) CRYSTAL OF A SCINTILLATION COUNTER AND ALSO AN IONIZATION
CHAMBER AND SI-ZBG COUNTER. THE SCINTILLATION COUNTER, CONSISTING OF A
CSI(TL) CRYSTAL 10 MM IN DIAMETER AND WITH A THICKNESS OF 1.7 MM BEHIND
A ALUMINUM FOIL 10 MU M IN THICKNESS (SIMILAR TO 2 MG TIMES CM PRIME
NEGATIVE2) HAD A GEOMETRY FACTOR G SIMILAR OR EQUAL TO 1 CM PRIME2.
STERAD WITH A TOTAL GEOMETRY FACTOR OF THE CRYSTAL G SIMILAR OR EQUAL TO
0.8 CM PRIME2. THE COUNTER WAS SITUATED OUTSIDE THE INSTRUMENT PACKAGE
AND MEASURED THE TOTAL ENERGY RELEASE IN THE CRYSTAL AND THE COUNTING
RATE FOR THREE ENERGY THRESHOLDS (E IS GREATER THAN 40 KEV. E IS GREATER
THAN 300 KEV AND E IS GREATER THAN 5 MEV). THE SI-ZBG COUNTER AND THE
IONIZATION CHAMBER WERE SITUATED WITHIN THE SATELLITE BEHIND A MINIMUM
SHIELDING IS SIMILAR TO 1 G TIMES CM PRIME NEGATIVE2. THE INTENSITY
REGISTERED BY THE SI-ZBG COUNTER WAS PLOTTED ON A MAP AS LINES OF EQUAL
INTENSITY.

CIRC ACCESSION NO--AP0126525
ABSTRACT/EXTRACT--THE GENERAL NATURE AND PECULIARITIES OF DISTRIBUTION OF
THE LINES OF EQUAL INTENSITY FOR ALTITUDES 205-265 KM BEHIND A SHIELDING
IS SIMILAR TO 1 G TIMES CM PRIME NEGATIVE2 (AL) AGREE WELL WITH EARLIER
MEASUREMENTS, TAKING INTO ACCOUNT THE DIFFERENCE IN ALTITUDES AND THE
DIFFERENCES IN THE THICKNESS OF THE SHIELDING.   FIG. 2 IN THE TEXT SHOWS
THE ABSORBED DOSE IN THE FORM OF ISODOSES CORRESPONDING TO THE INTENSITY
OF ENERGY RELEASE INT HE SCINTILLATION COUNTER.   COMPARISON OF DATA FROM
THE GAS DISCHARGE AND SCINTILLATION COUNTERS REVEALS THAT THE
GOEMAGNETIC CUTOFF OF PRIMARY COSMIC RAYS CONTINUES TO PLAY A DECISIVE
ROLE IN GEOGRAPHIC DISTRIBUTION OF THE INTENSITY OF THE ABSORBED DOSE AT
LOW ALTITUDES.   IT IS SHOWN THAT THE MAXIMUM ABSORBED DOSE, 3.9 MRAD,
WAS ON THE 12TH REVOLTUION.   HOWEVER, DURING THE MULTIDAY SATELLITE
FLIGHT THIS ABSORBED DOSE CAN SOMEWHAT RISE DUE TO MORE PORLONGED
PRESENCE OF THE SATELLITE IN THE REGION OF THE INNER RADIATION BELT IN
THE NEIGHBORHOOD OF THE BRAZILIAN MAGNETIC ANOMALY.   THE MINIMUM
ABSORBED DOSE OF SIMILAR TO 1.5 MRAD WAS ON THE THIRD REVOLUTION.   THE
PRINCIPAL CONTRIBUTION TO THE ABSORBED DOSE WAS FROM PROTONS WITH AN
ENERGY E IS GREATER TAHN 5 MEV FROM THE RADIATION BELTS.
FACILITY: NUCLEAR PHYSICS SCIENTIFIC RESEARCH INSTITUTE, MOSCOW
UNIVERSITY.

UNCLASSIFIED

USSR   UDC: 621.374.5(088.8)

MADYAR, P. M., ROMANENKO, V. I., IVANOV, V. P.

"A Rectangular Pulse Shaper"

USSR Author's Certificate No 272361, filed 23 Feb 68, published 9 Sep 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2G325 P)

Translation: This Author's Certificate introduces a square pulse shaper
based on thyristors. One of these is the main thyristor which is connected
in series with the load. The other is a quenching thyristor with a shaping
line connected to its anode. To extend the range of the output prf and
increase efficiency, the cathode of the main thyristor is connected through
a semiconductor diode to a matching resistor and to the cathode of the
quenching thyristor whose anode is connected to an auxiliary power supply
through a choke and a third thyristor.

1/1

MAD'YAROVA, R. S., NIKOLAYEVA, N. V., MOROGOVA, V. M., and GIL'DINA, S. S.,
Ufa Scientific Research Institute of Vaccines and Sera imeni I. I. Mechnikov

"Determination of Specific Antirabies Vaccine Activity by the Degree of
Antibody Adsorption"

Abstract: The long testing time and variability involved in the Habel and NIH
methods for determining immunogenicity of antirabies vaccines necessitated
development of a new method employing antibody adsorption by the vaccine.
Antibody adsorption was found to be optimum when a mixture of vaccine and
gamma-globulin was kept at 4°C for 20 hours followed by 1 hour at 37°C, or at
37°C for 3 hours. Immunogenicity of Moskva strain and CVS standard virus
vaccines was tested by this method in comparison with a reference vaccine. No
significant differences were found. Next the 3 methods were compared in tests
with Fermi vaccine. Variation in the revealed immunogenicity was statistically
insignificant. Thus use of the new method is recommended, particularly because
it requires half the testing time needed for the Habel and NIH methods.
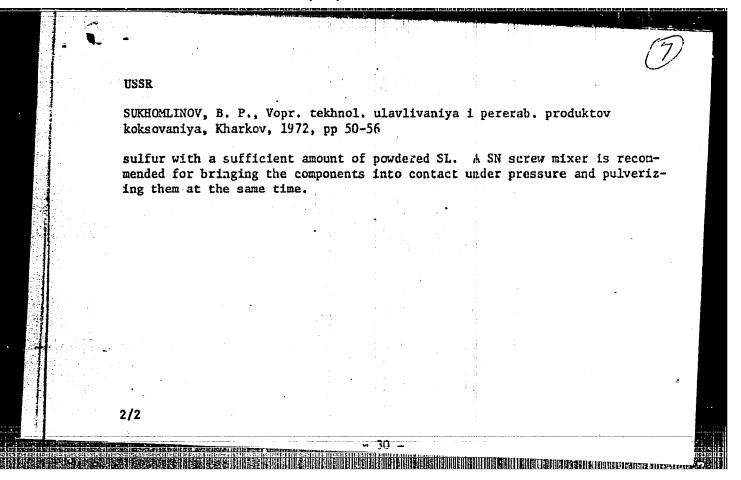
1/1

USSR

BLIZNYUK, N. K., KVASHA, Z. N., VARSHAVSKIY, S. L., BARANOV, Yu. I.,
LIBMAN, B. Ya., STREL'TSOV, R. V., PROTASOVA, L. D., MARKOVA, L. I.,
KHOKHLOV, P. S., MADZHARA, G. A., KIRILINA, L. E., All-Union Scientific
Research Institute of Phytopathology

"A Method of Making Thiophosphonyl Dihalides"

Translation: Compounds of the general formula $RP(S)X_2$ (I) ($R = C_1-C_{12}$-alkyl,
cycloalkyl, aryl, unsubstituted alkyl or alkyl containing substituents, Cl
or Br; X = Cl, Br) are synthesized by reacting $(PS)_3P$ (II) with a 2-10-fold
excess of PX_3 with heating to 250-330°C in an autoclave. Example. A mixture
of 0.07 mole of II (R = Me) and 0.7 mole of PCl_3 is heated in an autoclave
test tube of stainless steel at 290-320°C for 5 hours. The excess PCl_3 is
driven off at atmospheric pressure and distillation of the residue in a
vacuum gives I (R=Me, X=Cl), boiling point 70-3°/80, n^{20}_D 1.5510, d_4^{20} 1.4421,
yield 52%. Similar methods are used to produce other compounds of type I
(given are R, X, boiling point in °C/mm, n^{20}_D, d_4^{20}, yield in %): Et, Cl,
64-8/15, 1.5418, 1.3527, 58; Pr, Cl, 85-8/15, 1.5285, 1.2942, 40; iso-Pr,
Cl, 72-5/15, 1.5290, 1.3017, 47.5; Bu, Cl, 111-13/25, 1.5269, --, 65;

1/2

USSR

SUKHOMLINOV, B. P., Vopr. tekhnol. ulavlivaniya i pererab. produktov koksovaniya, Kharkov, 1972, pp 50-56

sulfur with a sufficient amount of powdered SL. A SN screw mixer is recommended for bringing the components into contact under pressure and pulverizing them at the same time.

2/2

Translation: This Author's Certificate introduces: 1. A method of making bis-(organothiol)-pentaerythritol phosphates distinguished by the fact that pentaerythritol chlorophosphite is reacted with sulphenyl chlorides and acetic acid in an inert organic solvent with subsequent isolation of the goal product by conventional methods. 2. A modification of this method distinguished by the fact that chloroform is used as the inert organic solvent. 3. A modification of the method covered in point 1 distinguished by the fact that the process si carried out at a temperature from -40 to +20°C. 4. A modification of the process covered in point 1 distinguished by the fact that the pentaerythritol and phosphorus trichloride in an inert organic solvent such as chloroform in the presence of catalytic quantities of an organic base such as

1/2

USSR

BLIZNYUK, N. K., et al., Otkrytiya, Izobreteniya, Primyshlennyye Obraztsy,
Tovarnyye Znaki, No 15, Apr 73

pyridine. 5. A modification of the procedure covered in point 1 distinguished
by the fact that the sulphenyl chloride is the product of interaction of an
organic thiol or disulfide with an equimolar quantity of chlorine or sulfuryl
chloride.

2/2

USSR   UDC 547.241.07

BLIZNYUK, N. K., KVASHA, Z. N., PROTASOVA, L. D., MAIZHARA, G. A., VARSHAVSKIY,
S. L., LIBMAN, B. Ya., and BARANOV, Yu. I., All-Union Scientific Research
Institute of Phytopathology

"A Method of Making Dihalophosphines"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 5, Feb 71, Author's Certificate No 292988, Division C, filed 10 Nov 69,
published 15 Jan 71, p 102

Translation: This Author's Certificate introduces: 1. A method of making
dihalophosphines by interacting a hydrocarbon halide or polyhalide with
white phosphorus or a phosphorus trihalide with the application of heat
and in the presence of a catalyst, with subsequent isolation of the goal
product by conventional methods. As a distinguishing feature of the patent,
the yield of the goal product is increased by using selenium, selenium
anhydride or phosphorus selenide as the catalyst. 2. A modification of
this method distinguished by the fact that the process is done at a tempera-
ture of 250-380°C.

1/1

USSR

BLIZNYUK, N. K., KVASHA, Z. N., MADZHARA, G. A., MARKOVA, L. I.

"Method of Producing Arylthiophosphonic or Benzylthiophosphonic Acids"

USSR Author's Certificate No 298593, filed 30/03/70, published 4/05/71.
(Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract
No 4N585P by T. A. Belyaeva).

Translation: Substances with the general formula $R_m C_6 H_{5-m}(CH_2)_n P(S)Cl_2$ (I)
(R=H, alkyl, halide; n=0 or 1; m=1-5), used in the synthesis of pesticides,
are produced by reacting PCl_3 with $R_m C_6 H_{5-m}(CH_2)_n SH$ in a molar ratio of 3-5:1.
$PhCH_2SH$ is added to PCl_3, mixed 0.5-1 hr at about 20° and boiled 2 hr. The
solution is heated 2.5-3 hr in an autoclave of stainless steel at 250-270°,
cooled and I is separated (R=H, m=n=1), b. p. 122-5°/2-3, $n^{20}D$ 1.6140. Also
produced were I (presented are R_m, n; yield in %, b. p. in °C, b. p. in °C/
mm): H, 0, 90, -, 120-3/5; 2.5-Cl$_2$, 0, 72, -, 150-3/2; p-tert-Bu, 0, 80,
39-41, 153-6/2; Cl$_5$, 0, 65, 110-4, -.
1/1

USSR

UDC 547.241.07

BLIZNYUK, N. K., KVASHA, Z. N., and MADZHARA, G. A., All-Union Scientific
Research Institute of Phytopathology

"A Method of Synthesizing Trithiophosphonates"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 5, Feb 71, Author's Certificate No 292985, Division, C, filed 20 Jan 69,
published 15 Jan 71, p 101

Translation: This Author's Certificate introduces: 1. A method of making
trithiophosphonates by interacting phosphorus acid chlorides with alkyl
halides and hydrogen sulfide in the presence of a catalyst such as pyridine
with heating. As a distinguishing feature of the patent, the method is
simplified by using phosphonic acid dichloride as the phosphorus acid
chloride. 2. A modification of this method distinguished by the fact that
the process is done at a temperature of 120-170°C.

USSR

BLIZNYUK, N. K., KVASHA, Z. N., VARSHAVSKIY, MADZHARA, G. A., All-Union Institute of Plant Pathology

"A Method for Preparing Mixed Thiophosphonates"

USSR Author's Certificate No 239946, class 12a, 23/03, (C 07 f), filed 20 Jun 66, published 13 Feb 70 (from RZh-Khimiya, No 21 (II), 10 Nov 70, Abstract No 21 N559 P by I. A. Mel'nikova)

Translation: Compounds with the general formula $RP(S)(OR')(OR'')$ (I) (R = Me, Ph, $PhCH_2$; R' = Et, R'' = alkyl, naphthyl, subst. aryl), active as pesticides, are obtained by reaction of chlorides of thiophosphinic acids with alcohols at 60-100° without a HCl acceptor in the presence of a catalyst (derivatives of P acids, their mixtures with bases, boron trifluoride ester, heterocyclic bases). For example, a mixture of 0.03 g mole of $MeP(S)(OPh)Cl$, 0.09 mole of abs. EtOH and 74 mg (1 mole %) beta-diethylaminoethyltrithio- methylphosphonate (II) is boiled for 4 hours and allowed to evaporate, producing in the residue I (R = Me, R'' = Ph, R' = Et), yield 92.7%, boiling point 102-121, n^{20}_D 1.5370, d^{20}_4 1.1486.   I (R' 1/2

USSR

BLIZNYUK, N. K., USSR Author's Certificate No 239946, class 12a, 23/03, (C 07 f), filed 20 Jun 66, published 13 Feb 70 (from RZh-Khimiya, No 21 (II), 10 Nov 70, Abstract No 21 N559 P by I. A. Mel'nikova)

≈ Et, R, R", and catalyst are given, yield in %, boiling point in $^\circ$C, n^{20}_D, d^{20}_4) is prepared in a similar fashion: Me, 2,4,5-Cl$_3$C$_6$H$_2$, P$_2$S$_5$ + C$_5$H$_5$N, 67, 157-9/1, 1.5683, 1.4159; Me, 2-MeOC$_6$H$_4$, II, 88, 139-41/1, 1/5400, 1.1922; Me, iso-Bu, II, 81, 65-6/2, 1.4585, 1.0010; Me, 2-ClC$_6$H$_4$, II 65, 125-7/1, 1.5310, 1.3062; Me, 2,4-Cl$_2$C$_6$H$_3$, II, 77, 142-3/0.5, 1.5500, 1.3177; Me, beta-naphthyl, II, 70, 176-8/0.5, 1.5720, 1.1811; PhCH$_2$, II, 58, 219-22/1, 1.5850, 1.3230; Me, alpha-naphthyl, (PhO)$_2$P(S)SK, 66, 176-9/1, 1.5980, 1.2210; Ph, beta-naphthyl, MePS$_2$ + Et$_3$N, 76, 237-40/1, 1.6260, -; Ph, 2-MeOC$_6$H$_4$, MePS$_2$ + C$_5$H$_5$N, 61, 174-6/1, 1.5775, 1.1627.

2/2

UDC 547.341.07

USSR

BLIZNYUK, N. K., KVASHA, Z. N., MADZHARA, G. A., and MARKOVA, I. I., All-Union Scientific Research Institute of Phytopathology

"A Method of Making Aryl- or Benzylthiophosphonic Acid Dichlorides"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 11, Apr 71, Author's Certificate No 298593, division C, filed 30 Mar 70, published 16 Mar 71, p 88

Translation: This Author's Certificate introduces: 1. A method of making aryl- or benzylthiophosphonic acid dichlorides by treating phosphorus trichloride with an aryl- or benzylthiol in the presence of heat, and isolating the goal product by conventional methods. As a distinguishing feature of the patent, the method is simplified and the yield of the goal product is increased by using an excess of phosphorus trichloride. 2. A modification of this method distinguished by the fact that the thiols and phosphorus trichloride are used in molar ratios of 1:3-5 respectively. 3. A modification of this method distinguished by the fact that the mixture of reagents is preboiled at atmospheric pressure and then heated in an autoclave at 250-320°C for 2-3 hours.

1/1

USSR   UDC 547.341.26'118.07

BLIZNYUK, N. K., KVASHA, Z. N., and MADZHARA, O. A., All-Union Scientific
Research Institute of Phytopathology

"A Method of Making Trithiophosphonates"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 1, Jan 71, Author's Certificate No 289096, division C, filed 11 Dec 69,
published 8 Dec 70, pp 77-78

Translation: This Author's Certificate introduces a method of making
trithiophosphonates by interacting thiol with a thiophosphonic acid deriva-
tive in the presence of heat with subsequent isolation of the goal product
by conventional methods. As a distinguishing feature of the patent, the
method is simplified and a greater variety of products is obtained by
using dithiophosphonic acid anhydride as the thiophosphonic acid derivative.
The patent also covers a modification of this method distinguished by the
fact that heating is done to 10-220°C.

1/1

USSR   UDC: 51:330.115

SULTANOV, F. Yu., MADZHIDOV, A. V.

"Transportation Network and City Planning"

V sb. Vopr. kibernetiki (Problems of Cybernetics--collection of works),
vyp. 41, Tashkent, 1970, pp 9-22 (from RZh-Kibernetika, No 7, Jul 71,
Abstract No 7V670)

[No abstract]

1/1

USSR

MADZHITOV, U. A., Laboratory of the Hygiene of the Atmosphere, Uzbek Scientific Research Institute of Sanitation, Hygiene and Occupational Diseases

"Contamination of the Atmosphere With Phosphamide During Its Agricultural Use"

Abstract: The use of phosphamide, a highly toxic organophosphorus pesticide results in significant contamination of the atmosphere in Uzbekistan. Studies of the degree and distribution of phosphamide in the atmosphere demonstrated an inverse ratio of its concentration to the distance and time from its application. With higher temperature and mobility of the air, the concentration and spread of the pesticide are increased. While self-purification of the atmosphere occurs faster over smaller areas treated, the contamination generally increases with increased areas of cultivated fields.

1/1

Microbiology   ⑦

IGNATOV, V. V., SHENDEROV, B. A., PANASENKO, V. I., PLIENKO, A. P., and
MAGAGINA, A. N., Saratov State University imeni N. G. Chernyshevskiy,
Saratov

"Elimination of the Genetic Determinants of Resistance in Staphylococcus
aureus Under the Effect of an Intensive Electromagnetic Field"

Moscow, Genetika, Vol 9, No 4, Apr 73, pp 57-61

Abstract: Two strains of Staph. aureus, 33 and 1074, were subjected to the
action of an electromagnetic field with a frequency of 2375 megacycles and
an intensity of 1516 kw. The strains, which had been isolated from patients,
were typical with respect to their microbiological properties. They were
polyresistant to penicillin, tetracycline, chloramphenicol, streptomycin,
erythromycin, mercuric chloride, and albucide. Under the action of the
electromagnetic field, some of the determinants of drug resistance were
eliminated. The effect was due to the action of heat produced by the
electromagnetic waves. A great number of cultures differing with respect
to the determinants of drug resistance that had been eliminated could be
segregated. After being stored for 10 mos in 0.8% Hottinger agar at 4°, the
majority of segregated cultures retained their new type of drug resistance.
1/2

USSR

IGNATOV, V. V., et al., Genetika, Vol 9, No 4, Apr 73, pp 57-61

In some cases, however, there was restoration of some of the lost factors of drug resistance, but not of all of them. The phenomenon described can be used for the study of the extra-chromosomal determinants in microorganisms that are responsible for drug resistance.

2/2